

3S4

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POWER PENTODE

MINIATURE TYPE

GENERAL DATA

Electrical:

Filament, Coated:

	*Series**	*Parallel***	
Filament arrangement			
Voltage	2.8	1.4	volts
Current	0.05	0.1	amp

Direct Interelectrode Capacitances:° ←

Grid No.1 to plate	0.3	μμf
Grid No.1 to filament (mid-tap) & grid No.3, and grid No.2	4.8	μμf
Plate to filament (mid-tap) & grid No.3, and grid No.2	4	μμf

Mechanical:

Mounting Position	Any
Maximum Overall Length	2-1/8"
Maximum Seated Length	1-7/8"
Length, Base Seat to Bulb Top (Excluding tip) ←	1-1/2" ±3/32"
Maximum Diameter	3/4"
Bulb	T-5-1/2
Base ←	Small-Button Miniature 7-Pin (JETEC No.E7-1)
Basing Designation for BOTTOM VIEW ←	7BA

Pin 1 - Filament (-series)
Pin 2 - Plate
Pin 3 - Grid No.1
Pin 4 - Grid No.2
Pin 5 - Filament Mid-Tap (-parallel), Grid No.3
Pin 6 - Plate
Pin 7 - Filament (+)

AMPLIFIER - Class A_1

Maximum Ratings, *Design-Center Values:*

	*Series**	*Parallel***	
PLATE VOLTAGE	90 max.	90 max.	volts
GRID-No.2 (SCREEN) VOLTAGE	67.5 max.	67.5 max.	volts
TOTAL MAXIMUM-SIGNAL CATHODE CURRENT ←	6# max.	12 max.	ma
TOTAL ZERO-SIGNAL CATHODE CURRENT	4.5# max.	9 max.	ma

Typical Operation and Characteristics:

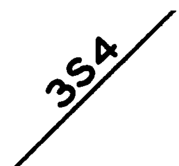
	*Series**		*Parallel***		
Plate Voltage	67.5	90	67.5	90	volts
Grid-No.2 Voltage	67.5	67.5	67.5	67.5	volts

° Without external shield.

For each 1.4-volt filament section. For series operation of the sections, a shunting resistor must be connected across the section between pins No.1 and No.5 to bypass any cathode current in excess of the rated maximum per section. When other tubes in series filament arrangement contribute to the filament current of the 3S4, an additional shunting resistor may be required between pins No.1 and No.7.

*,**: See next page.

← Indicates a change.





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	Series*		Parallel**		
→ Grid-No.1 (Control-Grid) Voltage	-7	-7	-7	-7	volts
Peak AF Grid-No.1 Voltage	7	7	7	7	volts
Zero-Sig. Plate Current	6	6.1	7.2	7.4	ma
Zero-Sig. Grid-No.2 Current	1.2	1.1	1.5	1.4	ma
Plate Resistance (Approx.)	0.1	0.1	0.1	0.1	megohm
Transconductance	1400	1425	1550	1575	μmhos
Load Resistance	5000	8000	5000	8000	ohms
Total Harmonic Distortion	12	13	10	12	%
Max.-Sig. Power Output	160	235	180	270	mw

→ **Maximum Circuit Values (For maximum rated conditions):**

Grid-No.1-Circuit Resistance:		
For fixed-bias operation	2.2 max.	megohms
For cathode-bias operation	2.2 max.	megohms

→ **Typical Operation with Single Filament Section:●**

Filament Voltage	1.4	volts
Filament Current	0.05	amp
Plate Voltage	90	volts
Grid-No.2 Voltage	67.5	volts
Grid-No.1 Voltage	-7	volts
Peak AF Grid-No.1 Voltage	7	volts
Zero-Signal Plate Current	3.7	ma
Zero-Signal Grid-No.2 Current	0.7	ma
Plate Resistance (Approx.)	0.2	megohm
Transconductance	800	μmhos
Load Resistance	16000	ohms
Total Harmonic Distortion	12	%
Maximum-Signal Power Output	145	mw

→ **Maximum Circuit Values (For maximum rated conditions):**

Grid-No.1-Circuit Resistance:		
For fixed-bias operation	2.2 max.	megohms
For cathode-bias operation	2.2 max.	megohms

* Filament voltage applied across the two sections in series between pins No.1 and No.7. Grid-No.1 voltage is referred to pin No.1.

** Filament voltage applied across the two sections in parallel between pin No.5 and pins No.1 and No.7 connected together. Grid-No.1 voltage is referred to pin No.5.

● Either filament section may be operated singly with the other section floating. It is to be noted, however, that such operation may impair the emission capabilities of the unused section. Although in subsequent operation the unused section may be operated in series with the used section, it should not be operated singly.

Curves shown under Type 1S4 also apply to the 3S4 with the filaments connected in parallel

→ Indicates a change.